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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/933,822	09/19/1997	CHARLES EDWARD BOWERS	30-2138CIP1	6815

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HONEYWELL INTERNATIONAL INC.  
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[REDACTED] EXAMINER

YAO, SAM CHAUN CUA

ART UNIT	PAPER NUMBER
	1733

DATE MAILED: 05/07/2003

25

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)
	08/933,822	BOWERS, CHARLES EDWARD
	Examiner	Art Unit
	Sam Chuan C. Yao	1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 08 October 2001.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-15, 19 and 20 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 16, 18 and 21 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

In light of a newly found art, a new ground of rejection is made. This office action will replace an office action that was mailed on 03-03-03.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Queen et al (US 5,567,256) in view of Stahlecker et al (US 4,495,758) and GB 2,205,116 A.

Queen et al discloses a process of making blended yarns for carpet rugs, the process comprises spinning 70-90% of cotton fibers and 30-10% of heat-activated polyester binder fibers to form blended yarns, ply twisting the blended yarns; and then heat-setting the ply twisted yarns at a temperature of about 275 °F (i.e. 135 °C) to melt the binder fibers "so that the cotton fibers are *impregnated, reinforced and strengthened*" by the fibers (abstract; col. 1 line 48 to col. 3 line 4; claim 1; figure 1). Although not explicitly disclosed, it is understood that, the heat-set ply twisted yarns is cooled to harden the binder fibers, and a bundle of cotton fibers is fed into a spinning station. In any event, these limitations would have been obvious in the art, these limitations are conventional in the art.

Queen et al differs from claim 1, in that, Queen does not expressly disclose the type of spinning technique which is used in making a blended yarn. In particular, Queen et al does not expressly disclosed using either a ring-spinning or wrap spinning method in forming a blended yarn. However, it would have been obvious in the art to use either a ring-spinning or wrap spinning technique in making a blended yarn taught by Queen et al, because: a) it is conventional in the art to make yarns by either ring spinning method or wrap spinning method; b) it is well known in the art of making yarn to form a blended binder/base yarn using a wrap spinning method as disclosed for example by Stahlecker et al (col. 1 lines 9-40; abstract); and c) it is well known in the art to **wrap-spin** and heat-activate a blend of binder-fibers containing heat-activated adhesive and base fibers to stabilize a blended carpet yarn thereby "*improving the tuft definition and appearance retention*" as exemplified in the teachings of GB '116 (abstract; page 6 full paragraph 1; claim 1).

With respect to claim 18, it is conventional in the art to form bundles of staple cotton fibers by spinning them together.

3. Claims 16, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lofquist (US 5,478,624) in view of Queen et al (US 5,567,256), Scott (US 4,668,552) and Stahlecker et al (US 4,495,758).

With respect to claims 16 and 21, Lofquist discloses a process of making a synthetic blended yarn for carpets, the yarn having heat-activated binder fibers, the process comprises:

a) providing a bulk continuous filament base fiber,

- b) blending the bulk base fiber with heat-activated binder fibers "via conventional means such as commingling" (emphasis added) to form a blended yarn, the heat-activated binder fibers have a melting range of 165-190°C;
- c) twist-setting at least two blended yarns to form a plied yarn using a Suessen or Superba processes and the plied yarn comprises about 1-12% weight of binder fibers;
- d) heating the plied yarn to melt the binder fibers; and then
- e) cooling the heated yarn to harden the binder fibers (col. 1 line 62 to col. 2 line 22; col. 3 line 15 to col. 4 line 29; col. 7 line 35 to col. 8 line 17).

Lofquist does not expressly teach using either a ring spinning or wrap spinning technique in forming a blended yarn, where binder fibers uniformly wrap around base fibers. However, absent any showing of unexpected benefit/result, it would have been obvious in the art to use a wrap spinning technique in making a synthetic blended yarn of Lofquist, where binder fibers is uniformly wrapped around base fibers, because: a) it is conventional in the art to form yarns by ring spinning or wrap spinning bundle of fibers; b) Queen et al discloses making blended yarns for carpet rugs by spinning cotton fibers and heat-activated binder fibers to form blended yarns, ply twisting the blended yarns and then heat-setting the ply twisted yarns to melt the binder fibers "*so that the cotton fibers are impregnated, reinforced and strengthened*" by the fibers (abstract; col. 1 line 48 to col. 3 line 4; claim 1; figure 1); c) Stahlecker et al discloses a process of making blended wrapped yarns, the process comprises wrap spinning a binder strand and a yarn sliver together to spirally wrap the binder strand around the yarn sliver (col. 1 lines 9-40; abstract); d) it is also old in the art to uniformly spirally wrapped a heat-activated binder strand around a base strand and to thermally activate the binder strand to form a tufting carpet yarn as taught for example by Scott (col. 6 lines 52-68; figures 3-

5 and 8); and, e) it is well within the purview of choice in the art to choose on whether to form yarns using an illustrative method suggested by Lofquist or other conventional yarn making methods such as a wrap spinning technique, only the expected result of effectively forming a blended yarn having base fibers and binder fibers would have been achieved in using any one of the well known methods. Moreover, in view of the similarity of the manufacturing processes between the recited claim and the applied prior art process, a binder fiber material in a resultant blended synthetic yarn must naturally be uniformly wrapped around a base fiber material.

With respect to claim 18, since Lofquist teaches using a yarn from a base fiber prior to commingling it with binder fibers (col. 3 lines 37-41); and since it is conventional in the art to form yarns by spinning a fiber bundle; this claim would have been obvious in the art making the synthetic yarn of Lofquist.

4. Claims 16, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahlecker et al (US 4,495,758) taken with Queen et al (US 5,567,256), Lofquist (US 5,478,624), GB 2,205,116 A and Scott (US 4,668,552).

Stahlecker et al discloses a process of making blended wrapped yarns, the process comprises wrap spinning a binder strand and a yarn sliver together to spirally wrap the binder strand around the yarn sliver (col. 1 lines 9-40; abstract). Though not expressly disclosed, it is taken that the binder strand taught by Stahlecker et al and the binder strand of related arts disclosed in the background of the invention are heat-activated adhesive. In any event, such would have been obvious in the art as such is well known in the art as exemplified in the teachings of GB '116 (abstract; page 2 lines 16-25; page 5 full paragraphs 1-2; page 6 full paragraph 1), Scott (col. 2 lines 60-65; col. 6 lines 52-68; figures 3-4 and 8-9), and Lofquist (abstract). Note: Scott discloses the advantage of enhancing "*the integrity of the fabric*" in using heat-activated binder fibers

in forming a blended wrap yarn (col. 2 lines 60-65); Queen et al discloses making blended yarns for carpet rugs by spinning cotton fibers and heat-activated binder fibers to form blended yarns, ply twisting the blended yarns and then heat-setting the ply twisted yarns to melt the binder fibers "so that the cotton fibers are *impregnated, reinforced and strengthened*" by the fibers (abstract; col. 1 line 48 to col. 3 line 4; claim 1; figure 1); and GB '116 teaches blending thermally activated binder fibers to base fibers to enhance the stability of a resultant yarn (abstract; page 5 full paragraph 1). Moreover, it is also taken that the blended yarn of Stachlecker and a yarn in related prior art disclosed by Stachlecker comprise binder strand which is wrapped uniformly around the yarn sliver because of the similarity of the manufacturing processes and because Stahlecker et al expressly discloses "*a binder strand which is spirally wrapped about the core strand.*" (abstract). In any event, such would have been obvious in the art because Scott teaches the desirability of uniformly and spirally wrapping binder strand around a base yarn as shown in figures 3-6 so that binder fibers can evenly be distributed to base fibers.

The process of Stahlecker and a related prior art disclosed by Stahlecker are silent on the composition of the binder relative to the yarn sliver. However, such would have been obvious in the art because Lofquist discloses the desirability of blending 1-12 weight per cent of binder strand to a base yarn to form a carpet yarn (col. 2 lines 28-58); because Scott discloses spirally wrapping about 3-10 weight per cent (based on the total weight of the yarn) of binder strand around a base strand (claims 2 and 6); and, because one in the art would have determined a workable composition of a blended yarn for the desired end-use of the article. Furthermore, as noted earlier, Queen et al teaches using 10-30% of heat-activated binder fibers in making a blended yarn by spinning. As for the steps of heating to melt the binder around the yarn and cooling to

harden the binder, such would have been obvious in the art as such is conventional in the art as taught by Scott, Lofquist and Queen et al.

With respect to claims 18 and 21, see column 3 line 38 to col. 4 line 42 of Lofquist.

5. Claim 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (US 4,668,552) in view of Stahlecker et al (US 4,495,758) and GB 2,205,116.

Scott, drawn to making tufting carpet yarns, substantially discloses the process of making the blended yarn recited in claim 16 (claims 2 and 6; figures 3-4 and 8-9). Scott is silent on a method on how to spirally/helically wrapping the binder strand (12) around the base strand (11). In particular, Scott does not teach using a wrapping spinning technique to helically/spirally wrap binder strand around the base strand. However, it would have been obvious in the art to wrap spin the base strand and the binder strand to helically/spirally wrap the binder strand around the base strand as such is a well known effective technique in the art as exemplified in the teachings of Stahlecker et al (col. 1 lines 9-40; abstract) and it is well known to form a blended synthetic yarn comprising binder fibers and base fibers using wrap-spinning technique as exemplified in the teachings of GB '116 (abstract; page 2 lines 16-25; page 5 full paragraphs 1-2; page 6 full paragraph 1).

With respect to claim 18, one in the art would appreciated the advantage of enhancing the integrity and transportability in spinning the yarn sliver prior to forming a blended yarn.

### ***Double Patenting***

6. Claims 16, 18, and 21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of

copending Application No. 09/143,583. The critical limitations recited in this application is virtually identical to claims 1-3 of Application '583.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7115 for regular communications and (703) 305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



Sam Chuan C. Yao  
Primary Examiner  
Art Unit 1733

scy  
April 29, 2003